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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/541,507

07/08/2005

Takushi Yoshida

P/1250-293

2987

2352 7590 02/04/2010  
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EXAMINER

MACARTHUR, SYLVIA

ART UNIT

PAPER NUMBER

1792

MAIL DATE

DELIVERY MODE

02/04/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/541,507	<b>Applicant(s)</b> YOSHIDA ET AL.	
	<b>Examiner</b> Sylvia R. MacArthur	<b>Art Unit</b> 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 August 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 40-78 is/are pending in the application.
- 4a) Of the above claim(s) 51-56 and 69-78 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 40-50 and 57-67 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/25/2009 has been entered.

### ***Response to Amendment***

2. The amendment of the claims filed 11/25/2009 have necessitated further search and consideration. Applicant argues that the abnormality is detected based on the combined effect of the collection data of the plurality of control elements (interpreted as processing parameters).

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 40-47 and 57-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takashi et al (JP 2003-005826) using the Machine generated translation provided by applicant in view of Nakamoto et al (US 7,047,093) or Uchida et al (JP 06-331507).

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3. Takashi et al teaches a system and method for management wherein the apparatus comprises a network having a coupling (plant 2 is provided with a AGC 4 and LAN 9) between a substrate processing apparatus (processors M1-Mn) discharging solution onto a rotation substrate via spin chuck 40, a computer 7 comprises a collection part (data box, see abstract) wherein data such a temperature and humidity are monitored (via sensor 44) and collected, see also [0036 and 0037] wherein other control elements (such as rotation speed) are recited. The term non-conformity and automated diagnosis program found through the prior art is interpreted as the abnormality see also the claims section. Note humidity is interpreted as a measure of concentration. Takahashi teaches that an abnormality is detected based of data from temperature or humidity. Takahashi et al fails to teach the combined effect of temperature and humidity will signal an abnormality in the overall process.

4. The prior art of Nakamoto et al teaches a plurality of data corresponding to outputs from a plurality of sensors. In the figures, abstract, and columns 7 and 8, Nakamoto et al teaches that the combination of the microcomputer and the operator detect an abnormality (an error in the semiconductor manufacturing apparatus) is detected when analyzing the totality of the data that the combined effect). Like the prior art of Uchida et al teaches a supervisory diagnostic method wherein a plurality of data is collected and the combination of the effects of the data produces the analysis of an abnormality and its effect of the processing apparatus see the English Translation of the Abstract. Thus both Nakamoto et al and Uchida et al provide suggestions of using the combination of the processing parameter data to determine the status of the process. These prior art show that it is well known technology to analyze the totality of the data to determine the status of the process and the severity of the abnormality. Thus, it would have been

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obvious for one of ordinary skill in the art at the time of the claimed invention to use the prior art of Nakamoto et al or Uchida et al to suggest using the combined effect of the data collected in the method of Takahashi et al.

The discussion of the supply pipe in [0027] in Takahashi et al reads on the discharge step.

Note the specific liquid discharged is a matter of an intended use as the nozzles and supply pipes of the prior art are inherently capable of supplying pure water and/or HF and perform cleaning. Furthermore, the type of fluid and process performed does not structurally limit the supply apparatus as claimed. Note also that the sequential order of the processing steps do not further limit the structure of the apparatus as all are controlled by the process controllers (1st , 2nd control sections, and computer) and are inherently capable of performing the steps in the order claimed.

5. Claims 48-50 and 65-67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takashi et al (JP 2003-005826) in view of Nakamoto et al (US 7,047,093) or Uchida et al (JP 06-331507) as applied in claims 40-47 and 57-64 above in further view of Konishi et al (US 6,145,519).

6. The teachings of Takashi et al as modified by Nakamoto et al (US 7,047,093) or Uchida et al (JP 06-331507) were discussed above. The modification fails to teach a circulation mechanism. Konishi et al teaches a substrate processing unit wherein a substrate is cleaned. Konishi et al teaches a recovery unit to recycle/circulate the treatment solution. Konishi et al teaches both HF and water as treatment fluids see col. 8 line 58 and the abstract. The motivation to provide a circulation system is that recycling/recovery of the treatment is conventional and

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known to allow for conservation of treatment fluids and save process costs as "fresh", previously unused solution is unnecessary or greatly reduced for subsequent runs. Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to modify the apparatus of Takashi et al as modified by Nakamoto et al or Uchida et al with Konishi et al.

***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sylvia R. MacArthur whose telephone number is 571-272-1438. The examiner can normally be reached on M-Th during the hours of 8 a.m. and 4:30 p.m..

8. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571-272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

9. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

January 19, 2010

/Sylvia R MacArthur/  
Primary Examiner, Art Unit 1792